

SEQUENCE LISTING

<110> SIBBESEN, OLE
SORENSEN, JENS FRISBAEK

<120> PROTEINS

<130> 078883/0132

<140> 09/869,155

<141> 2001-06-25

<150> PCT/IB99/02071

<151> 1999-12-17

<150> GB 9828599.2

<151> 1998-12-23

<150> GB 9907805.7

<151> 1999-04-06

<150> GB 9908645.6

<151> 1999-04-15

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<170> PatentIn Ver. 2.1

<210> 1

<211> 57

<212> PRT

<213> Artificial Sequence

<220>

<221> MOD_RES

<222> (17)

<223> Any Amino Acid

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<222> (43)

<223> Any Amino Acid

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<222> (49)

<223> Any Amino Acid

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 1

Leu Ala Val Val Ala Arg Ala Val Lys Asp Val Ala Pro Phe Gly Val
1 5 10 15

Xaa Tyr Asp Thr Lys Thr Leu Gly Asn Asn Leu Gly Gly Tyr Ala Val
20 25 30

Pro Asn Gln Leu Gly Leu Leu Asp Gly Gly Xaa Asp Trp Thr Met Ile
 35 40 45

Xaa Lys Asn Ser Met Val Asp Val Lys
 50 55

<210> 2
 <211> 38
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> MOD_RES
 <222> (26)
 <223> Any Amino Acid

<220>
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 <222> (31)
 <223> Any Amino Acid

<220>
 <221> MOD_RES
 <222> (34)
 <223> Any Amino Acid

<220>
 <221> MOD_RES
 <222> (38)
 <223> Any Amino Acid

<220>
 <223> Description of Artificial Sequence: Synthetic
 Xylanase Inhibitor

<400> 2
 Gly Pro Pro Leu Ala Pro Val Thr Glu Ala Pro Ala Thr Ser Leu Tyr
 1 5 10 15

Thr Ile Pro Phe His His Gly Ala Ala Xaa Val Leu Asp Val Xaa Ser
 20 25 30

Ser Xaa Leu Leu Trp Xaa
 35

<210> 3
 <211> 213
 <212> PRT
 <213> Unknown Organism

<220>
 <223> Description of Unknown Organism: Xylanase

<400> 3

Met Phe Lys Phe Lys Lys Lys Phe Leu Val Gly Leu Thr Ala Ala Phe
 1 5 10 15

Met Ser Ile Ser Met Phe Ser Ala Thr Ala Ser Ala Ala Gly Thr Asp
 20 25 30

Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn
 35 40 45

Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
 50 55 60

Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
 65 70 75 80

Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu
 85 90 95

Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
 100 105 110

Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser
 115 120 125

Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro
 130 135 140

Ser Ile Asp Gly Asp Asn Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
 145 150 155 160

Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Ala Ile Thr Phe Ser Asn
 165 170 175

His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp
 180 185 190

Ala Tyr Gln Val Leu Ala Thr Glu Gly Tyr Lys Ser Ser Gly Ser Ser
 195 200 205

Asn Val Thr Val Trp
 210

<210> 4

<211> 642

<212> DNA

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: Xylanase

<400> 4

atgtttaagt ttaaaaagaa attcttagtt ggattaacgg cagctttcat gagtatcagc 60
 atgttttcgg caaccgcctc tgcagctggc acagattact ggcaaaattg gactgacggg 120
 ggcgggacag taaacgcagt caatggctct ggcggaaatt acagtgttaa ttggtctaat 180
 accgggaatt tcgttggttg taaaggctgg actacaggct cgccatttag aacaataaac 240
 tataatgccg gtgtttgggc gccgaatggc aatggatatt taactttata tggctggacg 300

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agatcgcccc tcacgaata ttatgtggtg gattcatggg gtacttacag acctaccgga 360
acgtataaag gtaccgtaaa gaggatgga ggtacatatg acatatatac aacgacacgt 420
tataacgcac cttccattga tggcgataac actactttta cgcagtactg gagggtccgc 480
cagtcgaaga gaccgaccgg aagcaacgct gcaatcactt tcagcaatca tggttaacgca 540
tggaagagcc atggaatgaa tctgggcagt aattgggctt atcaagtctt agcgacagaa 600
ggatataaaa gcagcggaag ttctaatgta acagtgtggt aa 642

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<210> 5
<211> 213
<212> PRT
<213> Bacillus subtilis

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<400> 5
Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu
  1             5             10             15

Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp
      20             25             30

Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Ile Val Asn Ala Val Asn
      35             40             45

Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
      50             55             60

Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
      65             70             75             80

Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu
      85             90             95

Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
      100            105            110

Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser
      115            120            125

Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro
      130            135            140

Ser Ile Asp Gly Asp Arg Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
      145            150            155            160

Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser Asn
      165            170            175

His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp
      180            185            190

Ala Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser
      195            200            205

Asn Val Thr Val Trp
      210

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<210> 6
 <211> 642
 <212> DNA
 <213> Bacillus subtilis

<400> 6
 atgtttaagt ttaaaaagaa tttcttagtt ggattatcgg cagctttaat gagtattagc 60
 ttgttttcgg caaccgctc tgcagctagc acagactact ggcaaaattg gactgatggg 120
 ggcggtatag taaacgctgt caatgggtct ggcggaatt acagtgttaa ttggtctaata 180
 accggaaatt ttgttggtgg taaaggttgg actacaggtt cgccatttag gacgataaac 240
 tataatgccg gaggttgggc gccgaatggc aatggatatt taactttata tggttggacg 300
 agatcacctc tcatagaata ttatgtagtg gattcatggg gtacttatag acctactgga 360
 acgtataaag gtactgtaaa aagtgatggg ggtacatatg acatatatac aactacacgt 420
 tataacgcac cttccattga tggcgatcgc actactttta cgcagtactg gagggttcgc 480
 cagtcgaaga gaccaaccgg aagcaacgct acaatcactt tcagcaatca tgtgaacgca 540
 tgggaagagcc atggaatgaa tctgggcagt aattgggctt accaagtcac ggcgacagaa 600
 ggatatcaaa gtagtggaag ttctaacgta acagtgtggt aa 642

<210> 7
 <211> 213
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Mutant Xylanase

<400> 7
 Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu
 1 5 10 15
 Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp
 20 25 30
 Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn
 35 40 45
 Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
 50 55 60
 Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
 65 70 75 80
 Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu
 85 90 95
 Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
 100 105 110
 Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser
 115 120 125
 Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro
 130 135 140
 Ser Ile Asp Gly Asp Arg Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
 145 150 155 160

Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Ala Ile Thr Phe Ser Asn
 165 170 175

His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp
 180 185 190

Ala Tyr Gln Val Leu Ala Thr Glu Gly Tyr Lys Ser Ser Gly Ser Ser
 195 200 205

Asn Val Thr Val Trp
 210

<210> 8
 <211> 642
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Mutant Xylanase

<400> 8
 atgtttaagt ttaaaaagaa tttcttagtt ggattatcgg cagctttaat gagtattagc 60
 ttgttttcgg caaccgctc tgcagctagc acagactact ggcaaaattg gactgatggg 120
 ggcggtaccg taaacgctgt caatgggtct ggcggaatt acagtgttaa ttggtctaata 180
 accggaatt ttgttggtgg taaagggtgg actacaggtt cgccatttag gacgataaac 240
 tataatgccg gagtttgggc gccgaatggc aatggatatt taactttata tggttggacg 300
 agatcacctc tcatagaata ttatgtagt gattcatggg gtacttatag acctactgga 360
 acgtataaag gtactgtaaa aagtgatggg ggtacatatg acatatatac aactacacgt 420
 tataacgcac cttccattga tggcgatcgc actactttta cgcagtactg gagtgttcgc 480
 cagtcgaaga gaccaaccgg aagcaacgct gctatcactt tcagcaatca tgtgaacgca 540
 tggaagagcc atggaatgaa tctgggcagt aattgggctt accaagtcct cgcgacagaa 600
 ggatataaaa gttccggaag ttctaacgta acagtgtggt aa 642

<210> 9
 <211> 213
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Mutant Xylanase

<400> 9
 Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu
 1 5 10 15
 Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp
 20 25 30
 Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn
 35 40 45
 Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
 50 55 60

Val Val Gly Lys Gly Trp Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn
65 70 75 80

Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu
85 90 95

Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
100 105 110

Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser
115 120 125

Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro
130 135 140

Ser Ile Asp Gly Asp Asn Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
145 150 155 160

Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Ala Ile Thr Phe Ser Asn
165 170 175

His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp
180 185 190

Ala Tyr Gln Val Leu Ala Thr Glu Gly Tyr Lys Ser Ser Gly Ser Ser
195 200 205

Asn Val Thr Val Trp
210

<210> 10

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Mutant Xylanase

<400> 10

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ttgttttcgg caaccgctc tgcagctagc acagactact ggcaaaattg gactgatggg 120
ggcggtagcg taaacgctgt caatgggtct ggcgggaatt acagtgttaa ttggtctaata 180
accggaaatt ttgttggttg taaaggttg actacagggt cgccatttag gacgataaac 240
tataatgccg gagtttgggc gccgaatggc aatggatatt taactttata tggttggaacg 300
agatcacctc tcatagaata ttatgtagtg gattcatggg gtacttatag acctactgga 360
acgtataaag gtactgtaaa aagtgatggg ggtacatatg acatatatac aactacacgt 420
tataacgcac cttccattga tggcgataat actactttta cgcagtactg gagtggtcgc 480
cagtcgaaga gaccaaccgg aagcaacgct gctatcactt tcagcaatca tgtgaacgca 540
tggaagagcc atggaatgaa tctgggcagt aattgggctt accaagtcct cgcgacagaa 600
ggatataaaa gttccggaag ttctaacgta acagtgtggt aa 642

<210> 11

<211> 213

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic Mutant Xylanase

<400> 11

Met Phe Lys Phe Lys Lys Asn Phe Leu Val Gly Leu Ser Ala Ala Leu
1 5 10 15

Met Ser Ile Ser Leu Phe Ser Ala Thr Ala Ser Ala Ala Ser Thr Asp
20 25 30

Tyr Trp Gln Asn Trp Thr Asp Gly Gly Gly Thr Val Asn Ala Val Asn
35 40 45

Gly Ser Gly Gly Asn Tyr Ser Val Asn Trp Ser Asn Thr Gly Asn Phe
50 55 60

Val	Val	Gly	Lys	Gly	Trp	Thr	Thr	Gly	Ser	Pro	Phe	Arg	Thr	Ile	Asn
65					70					75					80

Tyr Asn Ala Gly Val Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu
85 90 95

Tyr Gly Trp Thr Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser
100 105 110

Trp Gly Thr Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser
115 120 125

Asp Gly Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro
130 135 140

Ser Ile Asp Gly Asp Asn Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg
145 150 155 160

Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser Asn
165 170 175

His Val Asn Ala Trp Lys Ser His Gly Met Asn Leu Gly Ser Asn Trp
180 185 190

Ala Tyr Gln Val Met Ala Thr Glu Gly Tyr Gln Ser Ser Gly Ser Ser
195 200 205

Asn Val Thr Val Trp
210

<210> 12

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Mutant Xylanase

<400> 12

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atgtttaagt ttaaaaagaa tttcttagtt ggattatcgg cagctttaat gagtattagc 60
ttgttttcgg caaccgcctc tgcagctagc acagactact ggcaaaattg gactgatggg 120
ggcgggtaccg taaacgctgt caatgggtct ggcgggaatt acagtgttaa ttggtctaata 180
accggaatt ttgttggtgg taaagggtgg actacagggt cgccatttag gacgataaac 240
tataatgccg gagtttgggc gccgaatggc aatggatatt taactttata tggttggacg 300
agatcacctc tcatagaata ttatgtagtg gattcatggg gtacttatag acctactgga 360
acgtataaag gtactgtaaa aagtgatggg ggtacatatg acatatatac aactacacgt 420
tataacgcac cttccattga tggcgataat actactttta cgcagtactg gagtgttcgc 480
cagtcgaaga gaccaaccgg aagcaacgct acaatcactt tcagcaatca tgtgaacgca 540
tggaagagcc atggaatgaa tctgggcagt aattgggctt accaagtcac ggcgacagaa 600
ggatatcaaa gtagtggaag ttctaacgta acagtgtggt aa 642

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<210> 13

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 13

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Gly Ala Pro Val Ala Arg Ala Val Glu Ala Val Ala Pro Phe Gly Val
  1             5             10             15

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Cys Tyr Asp Thr Lys Thr Leu Gly Asn Asn Leu Gly Gly Tyr Ala Val
          20             25             30

```

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Pro Asn Val
      35

```

<210> 14

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 14

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Lys Arg Leu Gly Phe Ser Arg Leu Pro His Phe Thr Gly Cys Gly Gly
  1             5             10             15

```

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Leu

```

<210> 15

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 15

Leu	Pro	Val	Pro	Ala	Pro	Val	Thr	Lys	Asp	Pro	Ala	Thr	Ser	Leu	Tyr
1				5					10					15	

Thr	Ile	Pro	Phe	His
				20

<210> 16

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 16

Leu	Leu	Ala	Ser	Leu	Pro	Arg	Gly	Ser	Thr	Gly	Val	Ala	Gly	Leu	Ala
1				5					10					15	

Asn	Ser	Gly	Leu	Ala	Leu	Pro	Ala	Gln	Val	Ala	Ser	Ala	Gln	Lys
			20					25					30	

<210> 17

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 17

Gly	Gly	Ser	Pro	Ala	His	Tyr	Ile	Ser	Ala	Arg	Phe	Ile	Glu	Val	Gly
1				5					10				15		

Asp	Thr	Arg	Val	Pro	Ser	Val	Glu
							20

<210> 18

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 18

Val Asn Val Gly Val Leu Ala Ala Cys Ala Pro Ser Lys

1

5

10

<210> 19

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Xylanase Inhibitor

<400> 19

Val Ala Asn Arg Phe Leu Leu Cys Leu Pro Thr Gly Gly Pro Gly Val

1

5

10

15

Ala Ile Phe Gly Gly Gly Pro Val Pro Trp Pro Gln Phe Thr Gln Ser

20

25

30

Met Pro Tyr Thr Leu Val Val Val Lys

35

40